REMARKS

Concurrently herewith, applicants have filed a request for continued examination under 37 CFR § 1.114.

Applicants submit that the claims are directed to patentable subject matter and are in condition for allowance as set forth below.

The drawings are objected to under 37 CFR § 1.83(a) because they fail to show the length and width of the bridge(s) as described in the specification and specified in the claims. Applicants are submitting a drawing Replacement Sheet of Figure 2A wherein applicants have amended drawing Figure 2A to show the length "L" and the width "D" of the bridge illustrated therein. The proposed amended Figure 2A is attached. Support is present in the specification at page 3, last paragraph; page 4, second paragraph; page 10, last paragraph, and page 11, first full paragraph. Withdrawal of the drawing objections and acceptance of amended Figure 2A are respectfully requested.

The sole rejection is of claims 16-26 under 35 U.S.C. §103(a) over EP 1 101 867 A1 (Graff), which is equivalent to U.S. Patent No. 6,461,720 B1, or over FR

2773564 A1 (Roussel), which is equivalent to U.S. Patent No. 6,524,683[1].

Claim 16 is the sole pending independent claim. Claim 16 is directed to a sheet of tissue paper comprising at least one first embossed zone and at least one unembossed zone. The at least one first embossed zone includes two arrays having protrusions on one side corresponding to alveoles on an opposite side. The alveoles in the embossed zones assume a truncated pyramidal shape with pyramidal sides and have a substantially polygonal base. The alveoles are configured along at least one array and adjacent alveoles in the array present mutually facing pyramidal sides. The mutually facing pyramidal sides of two adjacent alveoles subtend a bridge having rectilinear or substantially rectilinear edges of a length (L) greater than a maximum width (D) of the bridge. One bridge subtends a path between two unembossed zones that are separated by the array or at least two bridges connected to each other subtend a path between two unembossed zones that are separated by the array.

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[1] The office action incorrectly cites U.S. Patent No. 6,254,683 as being equivalent to FR 2773564 A1.

With respect to the rejection based on either Graff or Roussel, while each of Graff and Roussel teach that the shape of the protuberances described therein can be polygonal, oval or circular, neither of Graff nor Roussel teach or suggest any kind of bridge with mutually facing pyramidal sides of two adjacent alveoles, in particular wherein (1) the length of the bridge is greater than a maximum width of the bridge and (2) one bridge subtending a path between two unembossed zones that are separated by the array or at least two bridges connected to each other subtending a path between two unembossed zones that are separated by the array. The Examiner while acknowledging that Graff and Roussel do not explicitly teach the bridge and edge distance as claimed, states that due to the pattern resemblance of the applied art such would be considered a minor modification and obvious to one skilled in the art absent a showing of unexpected results. Applicants respectfully disagree.

Applicants respectfully submit that in the invention as claimed, the alveoles have a pyramidal shape with pyramidal sides and a polygonal base. At least a part of the alveoles are arranged along arrays between unembossed zones and adjacent alveoles along the arrays present facing

sides that are substantially parallel in order to form bridges. As the facing sides are rectilinear, they form rectilinear bridges. These bridges are longer than wide (L > D).

The alveoles of Graff form continuous cavities in the shapes of channels (see Figure 3, reference 25 corresponding to cavities 24 in Figures 4 and 6). Along these channels there are deeper round alveoles (see Figure 3, reference 23 corresponding to cavities 22 on Figures 4 and 5). Even if according to column 4, lines 25-29 of Graff, alveoles 23 can be of polygonal cross sections, Graff does not teach or suggest the formation of bridges between two adjacent alveoles, wherein the bridges have a length which is longer than the width (L > D) between two adjacent alveoles as claimed, only that there are channels 25. These channels in Graff do not form any bridge. Thus, the three dimensional geometries of the sheet in the area of the cavities differ from each other.

With respect to Roussel, alveoles may also be of polygonal cross section. However, Roussel does not teach or suggest the formation of arrays between unembossed zones. Further, Roussel does not teach or suggest rectilinear bridges joining unembossed zones.

The technical result of the embossing pattern of applicants' invention as claimed is shown by the test described in the captioned specification. Comparison is made with products embossed according to the pattern shown in Figure 5, i.e., round alveoles arranged according to arrays similar to the arrangement of arrays of the specimens embossed according to the invention.

The Table at page 16 of applicants' specification shows that specimens M1 and N1 of an embossed paper according to the invention present an improvement in absorption relatively to an example L1 of prior art embossed paper according to the pattern shown at Figure 5. Improvement is more pronounced at small loads, that is at 5 g/cm^2. A diffusion test is described at page 17 of the specification. The conclusion of the test is that in specimens M and N (which relate to M1 and N1, respectively, of the absorption test), liquid diffuses more efficiently in all directions than in the product (referenced as L) embossed according to a conventional embossed pattern. At page 18 of the specification, in an absorption rate test to determine to what extent the alveole geometry and the array of the alveoles allow creating bridges participating in

absorption, a drop of liquid decreases more rapidly in a product of the invention (see page 19).

Thus, a technical effect is shown to be related to the presence of the bridges as claimed. Applicants respectfully submit that the differences between the claimed sheet of paper and the teachings of the applied art are not minor or obvious modifications as shown by the unexpected results of the comparative tests set forth in the captioned application at pages 13-19.

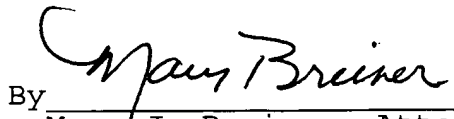
Accordingly, in view of the clarified language of claim 16 and the showing by the tests described in the specification that products having a bridge structure as claimed unexpectedly have improved liquid absorption and diffusion properties over products with conventional patterns, applicants submit that the paper sheet as claimed is not rendered obvious within the meaning of 35 U.S.C. §103 in view of Graff or Roussel. Withdrawal of the §103 rejection is, therefore, respectfully requested.

Reconsideration and allowance of the claims is respectfully urged.

6342/PCT/USSN 10/502,316
Group Art Unit 1791

Respectfully submitted,

PIERRE GRAFF ET AL

By 

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Attachment - Replacement Drawing Sheet (1 Sheet/4 Figures)